

ABSTRACT**METHOD FOR MEASURING
THE WAVE ABERRATIONS OF THE EYE**

The invention relates to medical instrumentation, in particular to diagnostic measuring devices, and can be applied, for example, for high-accuracy vision correction. This method uses probing the eye with a thin laser beam, detecting the radiation scattered by retina, measuring the wave front tilt in the form of first partial derivatives along the coordinates in a discrete set of the pupil points with known coordinates, approximating the wave front from said data as functions of pupil coordinates and calculating the wave aberrations of the eye. Partial derivatives are determined in any point of the pupil by means of spline approximation using the values in a discrete number of points, in which the wave front tilts are measured. This set of points can be located along concentric circles or along one of the orthogonal axes. The wave front is reconstructed using numerical integration along the radii with the initial integration point in the center of the pupil. The wave aberrations are calculated on base of wave front data reconstructed in the form of splines.

95451_1.DOC